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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/009,164 | 01/28/2002 | Katsuhiko Mori | F-7216 | 8323 |
| 28107 | 7590 | 06/08/2004 | EXAMINER | |
| JORDAN AND HAMBURG LLP 122 EAST 42ND STREET SUITE 4000 NEW YORK, NY 10168 | | | RUTHKOSKY, MARK | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1745 | |

DATE MAILED: 06/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/009,164

Applicant(s)

MORI ET AL.

Examiner

Mark Ruthkosky

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 12 and 13 is/are rejected.
- 7) ☐ Claim(s) 10 and 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>11/7/01, 12/31/01</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

The application is a 371 of PCT/JP00/02897. The priority papers have been made of record in the parent file.

Information Disclosure Statement

The information disclosure statements filed 11/7/2001 and 12/31/2001 have been placed in the application file, and the information referred to therein has been considered as to the merits.

Drawings

The drawings filed on 12/31/2001 have been approved.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 7 reads, "...wherein, in the side plates, a thickness of part around a portion to be sealed when the battery is constructed, is made at least 10% or more larger than a thickness of other part of the side plate." From this it is not clear as to what the other part is and how to

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determine the thickness of the other part, which is necessary to add 10% in order to determine the thickness of the portion to be sealed. Further, the phrase, "a thickness of part around a portion" appears to be missing the word "a" before the word "part."

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 6-8 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Okada et al. (US 6,174,620.)

The instant claims are to a prismatic battery case having a substantially rectangular cross-section comprising a substantially rectangular shorter side plate and a longer side plate wherein the shorter side plate is larger in thickness than the longer side plate.

Okada et al. (US 6,174,620) teaches a prismatic battery case having a substantially rectangular cross-section comprising a substantially rectangular shorter side plate and a longer side plate wherein the shorter side plate is larger in thickness than the longer side plate (claims 1-11.) Both sidewalls are around a portion to be sealed and one sidewall is 10% larger than the

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other sidewall. Aluminum alloys are noted as the casing material. Thus, the claims are anticipated.

With regard to claim 13, the MPEP 2113 states, "Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process."

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okada et al. (US 6,174,620) as applied above, and further in view of Moriwaki et al. (US 6,258,480.)

Okada et al. (US 6,174,620) teaches a prismatic battery case having a substantially rectangular cross-section comprising a substantially rectangular shorter side plate and a longer side plate wherein the shorter side plate is larger in thickness than the longer side plate (claims 1-11.) Both sidewalls are around a portion to be sealed and one sidewall is 10% larger than the other sidewall. Aluminum alloys are noted as the casing material. The reference does not teach a relationship wherein the thickness of the shorter sidewall plate is in the range of $(0.2 < 0.8)$ of the thickness of bottom plate of battery casing. The reference does not teach the case to be

processed to have a Vickers hardness of 1.5 times or larger than an unprocessed material. It is noted that claim 5 may depend from claim 1.

Moriwaki et al. (US 6,258,480) teaches a prismatic battery that has an aluminum alloy casing with a thickness of the sidewall in the range of $(0.2 < 0.8)$ of the thickness of bottom plate of battery casing. The aluminum casing is treated to have a Vickers hardness at least 1.5 times the metal prior to the formation of the case (see claims 1-28 and cols. 6 and 9 for examples.) It would be obvious to one of ordinary skill in the art at the time the invention was made to prepare the casing of Okada et al. (US 6,174,620) with a bottom plate having a greater thickness than the side walls of the battery casing and having an aluminum casing treated to have a Vickers hardness of at least 1.5 times the metal prior to the formation of the case, as Moriwaki et al. (US 6,258,480) shows that using an aluminum alloy casing 1) with a thickness of the sidewall in the range of $(0.2 < 0.8)$ of the thickness of bottom plate and 2) a Vickers hardness of 1.5 times or larger than an unprocessed material, will provide a light weight battery with thin walls and a that will have a corresponding high battery energy density. The casing will provide a strong, light weight housing for the electrode assembly while decreasing the amount of space occupied by the casing, thus allowing for increased active material and a higher battery capacity.

The artesian would have found the claimed invention to be obvious in light of the teachings of the references.

Claims 3-5, 9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moriwaki et al. (US 6,333,124) in view of Okada et al. (US 6,174,620.)

Moriwaki et al. (US 6,333,124) teaches a prismatic battery casing made of carbon steel that is composed of iron with 0.1% or less of carbon and titanium or niobium. The casing is

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treated to have a Vickers hardness at least 1.5 times the metal prior to the formation of the case (see the claims.) The casing is prepared by DI-processing and a punched, circular cross-section is noted, (see col. 6, lines 16-65 and col. 10, lines 10-60.) The reference does not teach the walls to have a thickness greater in a shorter sidewall than a longer sidewall.

Okada et al. (US 6,174,620) teaches a prismatic battery case having a substantially rectangular cross-section comprising a substantially rectangular shorter side plate and a longer side plate wherein the shorter side plate is larger in thickness than the longer side plate (claims 1-11.) Both sidewalls are around a portion to be sealed and one sidewall is 10% larger than the other sidewall. It would be obvious to one of ordinary skill in the art at the time the invention was made to prepare the battery of Moriwaki et al. (US 6,333,124) with a thickness greater in a shorter side-wall than a longer side wall as Okada et al. (US 6,174,620) teaches a battery with this shape and thickness has increase strength and is not easily deformed due to high inner pressures (col. 2.) Further, the weight and surface area of the casing decreases allowing for a higher battery capacity (col. 6 of '620.)

The artisan would have found the claimed invention to be obvious in light of the teachings of the references.

Allowable Subject Matter

Claims 10-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The process of making the prismatic battery casing is noted for claim 9. The reference does not teach a second process step wherein an intermediate cup element is prepared with a

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substantially elliptic cross section, which is smaller in minor axis diameter to major axis diameter ration than the cross section of the first intermediate cup. As the process of the prior art does not include this step, the process of claim 10 is considered allowable over the prior art.

Examiner Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Ruthkosky whose telephone number is 571-272-1291. The examiner can normally be reached on FLEX schedule (generally, Monday-Thursday from 9:00-6:30.) If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached at 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free.)

Mark Ruthkosky

Primary Patent Examiner

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6/2/04